



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,732	08/30/2001	Kentaro Hara	056203-0105	6485
22428	7590	06/05/2006		
FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER GENACK, MATTHEW W	
			ART UNIT 2617	PAPER NUMBER

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/941,732

Applicant(s)

HARA, KENTARO

Examiner

Matthew W. Genack

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 7-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 21 March 2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trompower, U.S. Patent No. 6,006,096, in view of Bachhuber *et. al.*, U.S. Patent No. 6,087,987.

Regarding Claims 1 and 3, Trompower discloses a network cellular communication system wherein a mobile terminal communicates with a plurality of base stations, each base station with one or more omni-directional and/or directional antennas, said base stations connected to a host computer via a backbone, and wherein said base stations change the power level of signals transmitted to said mobile terminal in order to determine the location of said mobile terminal (Abstract, Column 2 Line 66 to Column 3 Line 14, Column 10 Lines 29-40, Figs. 1-4). Specifically, the base stations sweep 360 degrees (either mechanically or electrically with beam forming methods) to determine a cell that the mobile terminal is in, and reduce the transmission powers and

Art Unit: 2645

receiver sensitivities in order to reduce the sizes of their respective coverage areas until the mobile terminal's location is determined to the best possible accuracy (Column 9 Line 43 to Column 10 Line 28, Fig. 2). The mobile terminal indicates that it has received signals from respective antennae of the various base stations by transmitting signals back to them, thereby providing Boolean reception data to the host computer for use in its determination of the mobile terminal's location (Figs. 8-10).

Trompower does not expressly disclose the determination of the position of the mobile terminal as viewed in a direction in which paired antennae are arrayed.

Bachhuber *et. al.* discloses a radio system that allows the electronic key for a motor vehicle to be located (Abstract, Column 1 Line 66 to Column 2 Line 2). The electronic key is portable (Column 4 Lines 6-15, Figs. 1-2). The motor vehicle contains a set of transmitter/receivers that are coupled to a controller and that are stationary with respect to said motor vehicle and that engage in wireless communication with the electronic key (Column 3 Line 61 to Column 4 Line 1, Column 4 Lines 21- 24, Fig. 1). The motor vehicle contains four antennae, coupled to respective transmitter/receivers, located in corners (Column 3 Lines 56-57, Column 6 Lines 20-23, Fig. 3). The transmitter/receivers transmit search signals that are received by the electronic key, and that causes said electronic key to transmit an identification signal back to the transmitter/receiver (Column 4 Lines 46-59); additionally, the electronic key can measure the received power levels of signals (such as search signals) sent from the transmitter/receivers and

Art Unit: 2645

convert these measurements into location information (Column 5 Lines 15-20), and transmit this information back to the transmitter/receivers and thereby the controller (Column 5 Lines 31-34). Bachhuber *et. al.* discloses that the antennas have predetermined directional characteristics that are used by the controller in the computation of the location of the electronic key relative to these antennas (and thus, relative to the baseline vectors determined by the positions of the antennae pairs) (Column 6 Lines 13-18).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Trompower by providing the means for the determination of the position of the mobile terminal as viewed in a direction in which paired antennae are arrayed.

One of ordinary skill in the art would have been motivated to make this modification so as to increase the sensitivity of the power measurements (Bachhuber *et. al.* Column 6 Lines 13-17).

Claim 2 differs substantively from Claim 1 in that Claim 2 recites the determination of the position of the portable device by said portable device, as opposed to the determination of the position of the portable device by the stationary device in Claim 1.

Trompower does not expressly disclose the determination of the position of the mobile terminal by said mobile terminal.

Bachhuber *et. al.* discloses a radio system that allows the electronic key for a motor vehicle to be located (Abstract, Column 1 Line 66 to Column 2 Line 2). The electronic key is portable (Column 4 Lines 6-15, Figs. 1-2). The motor

Art Unit: 2645

vehicle contains a set of transmitter/receivers that are coupled to a controller and that are stationary with respect to said motor vehicle and that engage in wireless communication with the electronic key (Column 3 Line 61 to Column 4 Line 1, Column 4 Lines 21- 24, Fig. 1). The motor vehicle contains four antennae, coupled to respective transmitter/receivers, located in corners (Column 3 Lines 56-57, Column 6 Lines 20-23, Fig. 3). The transmitter/receivers transmit search signals that are received by the electronic key, and that causes said electronic key to transmit an identification signal back to the transmitter/receiver (Column 4 Lines 46-59); additionally, the electronic key can measure the received power levels of signals (such as search signals) sent from the transmitter/receivers and convert these measurements into location information (Column 5 Lines 15-20), and transmit this information back to the transmitter/receivers and thereby the controller (Column 5 Lines 31-34).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Trompower by providing the means for the determination of the position of the mobile terminal by said mobile terminal.

One of ordinary skill in the art would have been motivated to make this modification so that the user of the mobile terminal can also make use of his location information.

4. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trompower in view of Bachhuber *et. al.*, further in view of Memmola, U.S. Patent No. 4,733,215.

Art Unit: 2645

Regarding Claim 7, Trompower does not expressly disclose the placement of the stationary antennae inside motor vehicles.

Bachhuber *et. al.* discloses that the stationary device is located inside of a motor vehicle (Column 3 Line 61 to Column 4 Line 1, Column 4 Lines 21- 24, Fig. 1).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Trompower by creating a wireless keyless motor vehicle entry system that is analogous to the system of the invention of Trompower.

One of ordinary skill in the art would have been motivated to make this modification because the problem of determining the position of a motor vehicle user with a wireless keyless entry device relative to his motor vehicle is well known in the art, and a wireless system that leads to improved position determination of a mobile device may be naturally applied to solving said problem.

Bachhuber *et. al.* does not expressly disclose the determination that the electronic key is inside or outside of the motor vehicle.

Memmola discloses an antitheft protection device that uses wireless technology that includes a portable transmitter (Abstract, Column 1 Line 49 to Column 2 Line 2, Column 4 Lines 42-55, Fig. 1). It can be determined if an individual is inside of a motor vehicle (Column 9 Lines 22-30).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Trompower as modified

Art Unit: 2645

by Bachhuber *et. al.* by providing means for the determination that the electronic key is inside or outside of the motor vehicle (and correspondingly, if the user in possession of said electronic key is inside or outside of said motor vehicle).

One of ordinary skill in the art would have been motivated to make this modification because the Boolean variable, whether one is inside or outside of a motor vehicle, has much relevance to the states that certain motor vehicle systems, such as locking mechanisms and the engine ignition, should be in.

Regarding Claim 8, Bachhuber *et. al.* discloses that the electronic key transmits an encoded signal that contains user-specific information (Column 4 Lines 25-28), and that the motor vehicle's engine control system is enabled if the user is positively identified Column (4 Lines 28-34).

Regarding Claim 9, Bachhuber *et. al.* teaches that the lock/unlock state of the doors of a keyless entry motor vehicle may be controlled by a portable wireless device (Column 1 Lines 32-63).

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trompower in view of Bachhuber *et. al.*, further in view of Memmola, further in view of Röhrl, U.S. Patent No. 6,211,776.

Neither Trompower, nor Bachhuber *et. al.*, nor Memmola expressly discloses the practice of reducing transmission power of the stationary vehicle-mounted device or the electronic key for the purpose of reducing the communication range.

Röhrl discloses a method by which an interrogation signal, transmitted from a motor vehicle antenna to a portable transponder, is incrementally reduced

Art Unit: 2645

in power until said portable transponder just barely receives said interrogation signal (Abstract, Column 1 Lines 51-58, Column 2 Lines 29-41).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Trompower as modified by Bachhuber *et. al.* as modified by Memmola by adding the practice in which the transmission power of the stationary device or electronic key is incrementally reduced so as to reduce communication range, including ranges restricted to the vehicle if the context is appropriate, until a minimum transmission output power is attained whereby each antennae detects the transmitted signal.

One of ordinary skill in the art would have been motivated to make this modification because it would make the theft of sensitive data, such as unlocking and ignition codes, much more difficult (*i.e.*, a potential thief with receiving equipment would have to be so close to the motor vehicle that said potential thief would risk being seen by the user).

Response to Arguments

6. Applicant's arguments filed 21 March 2006 have been fully considered but they are not persuasive.

Contrary to Applicant's assertion that "Trompower does not disclose determining the position of a portable device (mobile terminal) by varying the setting of amplitude relations between transmission output powers of first signals from respective stationary-device side antennae" Trompower does disclose this feature. Specifically, several base stations, with overlapping coverage areas, each base station coupled to a system backbone and host computer, cooperate

Art Unit: 2645

in locating a specific mobile terminal by each adjusting their respective transmission and reception power levels (Column 2 Line 66 to Column 3 Line 14, Column 3 Line 45 to Column 4 Line 3, Figs. 1-4). Since two or more base stations are involved in this process, a plurality of antennae are employed in locating the mobile terminal, and since the transmission and reception power levels for each base station are adjusted, the amplitude relations between the transmission output powers of these antennae vary. Bachhuber *et. al.* discloses the use of magnitude relations between reception intensity of paired antennae in determining the position of a mobile device (Column 2 Lines 44-54, Column 6 Lines 13-18). The combination of Trompower and Bachhuber *et. al.* results in the limitation in question.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2645

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew W. Genack whose telephone number is 571-272-7541. The examiner can normally be reached on FLEX.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-7541.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Matthew Genack

Examiner

TC-2600, Division 2617



17 May 2006


DUC NGUYEN
PRIMARY EXAMINER